WHAT IS CLAIMED IS:

1. A method for a thermo-electric cooler coupled to a laser diode, the method comprising:

operating the thermo-electric cooler in one of at least a low power mode and a standard mode, the laser diode configured to transmit signals in the low power mode and the standard mode; and

switching between the low power mode and the standard mode, wherein:

the low power mode maintains a laser diode at a temperature within a predetermined range of temperatures; and

the standard mode maintains the laser diode at a temperature that corresponds to a predetermined wavelength of light output from the laser diode.

2. The method of claim 1 wherein the low power mode is a Time Division Multiplexing (TDM) mode.

3. The method of claim 1 wherein the standard mode is a Dense Wavelength Divison Multipexing (DWDM) mode.

4. The method of claim 1 further comprising:

operating the thermo-electric cooler in a quasi-standard mode, the laser diode configured to transmit signals in the quasi-standard power mode.

5. The method of claim 1 wherein laser diode is configured in an OC-192 transceiver line card disposed in a synchronous optical network (SONET) communication system.

6. The method of claim 1 wherein the predetermined range of temperatures is a range of temperatures within which the laser diode has a user-defined power versus performance ratio.

7. The method of claim 1 wherein the predetermined range of temperatures are input by one of a user and a system generated source.

8. The method of claim 1 wherein the predetermined range of temperatures is determined by a user setting a temperature measure above and below a fixed temperature that corresponds to a wavelength of light output from the laser diode.

9. An apparatus comprising:

means for operating a thermo-electric cooler coupled to a laser diode in one of a low power mode and a standard mode; and

means for switching between the low power mode and the standard mode, wherein the low power mode maintains the laser diode at a temperature within a predetermined range of temperatures and the standard mode maintains the laser diode at a temperature that corresponds to a predetermined wavelength of light output from the laser diode.

10. The apparatus of claim 9 wherein the predetermined range of temperatures is determined by a user setting a temperature measure above and below a fixed temperature that corresponds to a wavelength of light output from the laser diode.

11. The apparatus of claim 9 wherein the low power mode is a Time Division Multiplexing (TDM) mode.

12. The apparatus of claim 9 wherein the standard mode is a Dense Wavelength Divison Multipexing (DWDM) mode.

13. The apparatus of claim 9 wherein laser diode is configured in an OC-192 transceiver line card disposed in a synchronous optical network (SONET) communication system.

14. An optical transceiver comprising:

a temperature circuit;

a thermo-electric cooler coupled to the temperature circuit; and

a laser diode coupled to the thermo-electric cooler, wherein the thermo-electric cooler is responsive to inputs from the temperature circuit, the inputs identifying one of at least a first mode and a second mode, wherein a choice of mode is a function of a performance requirement.

15. The optical transceiver of claim 14 wherein the performance requirement is one of the first mode, wherein the first mode is a standard mode for dense wavelength division multiplexing (DWDM) applications, and the second mode, wherein the second mode is a low-power mode for time domain multiplexing (TDM) applications.

16. The optical transceiver of claim 14, further comprising:

a temperature circuit, the temperature circuit including a switch configured to alter the thermo-electric cooler between the first mode and the second mode.

17. The optical transceiver of claim 14 wherein the second mode is a dense wavelength division multiplexing (DWDM) mode and the first mode is a time-division multiplexed (TDM) mode.

18. The optical transceiver of claim 14 further comprising:

a coupler coupled to the laser diode, the lens producing an optical signal; and

an optical fiber coupled to the coupler; and

a wavelength signal circuit coupled to the coupler and the temperature circuit, the wavelength signal circuit configured to transmit feedback to the temperature circuit to maintain a stable wavelength of the laser diode.

19. The optical transceiver of claim 14 wherein the optical transceiver is disposed on an OC-192 transceiver line card of a synchronous optical network (SONET) communication system.

20. The optical transceiver of claim 14 wherein the first mode is a low-power mode and the second mode is a standard mode, the first mode configured to permit a predetermined amount of wavelength drift.

21. The optical transceiver of claim 14 wherein the first mode is a low-power mode in which the thermo-electric cooler dissipates less than 5 Watts under normal operating conditions.

22. The optical transceiver of claim 14 wherein the low power mode permits wavelength drift within operable parameters.

23. A method for providing thermo-electric cooled system for operating a laser diode comprising:

operating a laser diode in one of a first mode and a second mode wherein the choice of mode is a function of a user-defined power and performance ratio.

24. The method of claim 23 wherein the function is a ratio of power versus performance wherein the power required to cool a laser diode is compared with the performance required for one of a plurality of laser diode applications.

25. The method of claim 24 wherein the plurality of laser diode applications include time division multiplexing (TDM), dense wavelength division multiplexing (DWDM) and wavelength division multiplexing (WDM) applications.